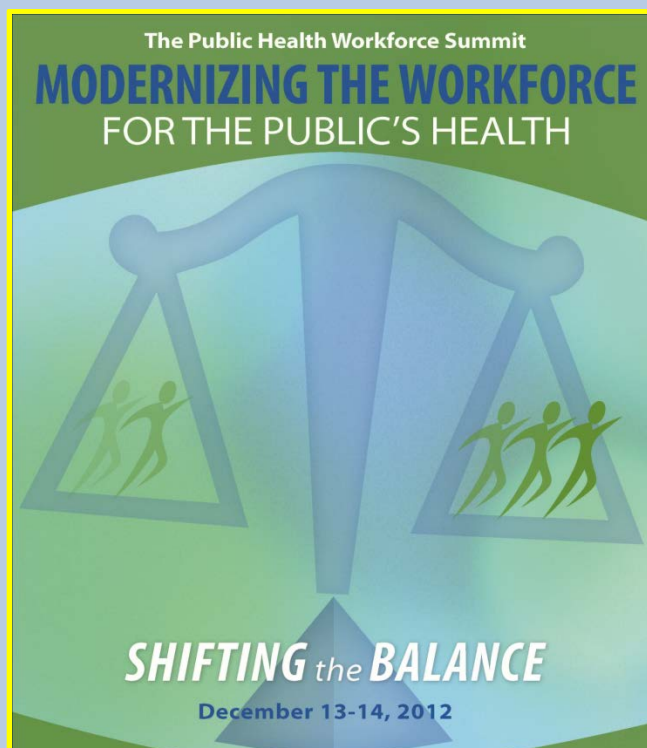


Modernizing the Workforce for the Public's Health: Shifting the Balance

Public Health Workforce Summit Report

August 2013



**Division of Scientific Education and Professional Development (Proposed)
Center for Surveillance, Epidemiology, and Laboratory Services (Proposed)
Office of Public Health Scientific Services (Proposed)
Centers for Disease Control and Prevention
Atlanta, Georgia**



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Note: The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Public Health Workforce Summit Report

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Public Health Workforce Summit Report

Modernizing the Workforce for the Public's Health: Shifting the Balance — Public Health Workforce Summit Report

Introduction

On December 13–14, 2012, the Centers for Disease Control and Prevention (CDC) convened the Public Health Workforce Summit, *Modernizing the Workforce for the Public's Health: Shifting the Balance*. Ninety summit participants represented approximately 40 organizations, including CDC's centers, institute, and offices, the Health Resources and Services Administration (HRSA), public health practice organizations, academic associations, health care disciplines, nonprofit associations, and foundations.

The summit convened partners as a call to action to

- strategize and prioritize the crucial actions needed for strengthening the workforce, and
- develop components of a coordinated public health workforce strategic framework that leverages contributions from multiple partners.

Before the Summit

In spring 2011, CDC established the Public Health Workforce Development Initiative (PHWDI) (<http://www.cdc.gov/osels/sepdpo/strategic-workforce-activities.html>). As one component of that initiative, the summit was convened to engage partners in addressing the changes occurring in public health, the associated effects on the workforce, and subsequent effects on the population's health. PHWDI's efforts are intended to strengthen the public health workforce by improving quality, availability, and accessibility of training and workforce development activities through such approaches as working within educational and employment systems.

CDC recognized that a call for action and collective solutions were needed, given the ongoing public health workforce crisis. The complex challenges affecting the workforce include

- budget and funding cuts;
- impending retirements among the workforce along with a diminishing number of workers;
- a gap between workforce skills and capacity and evolving practice needs;
- changes to public health practice (e.g., related to technology and health care reform);
- inattention to the public health workforce; and
- insufficient recognition outside public health of the workforce needed to improve the public's health.

CDC Summit Report — Modernizing the Public’s Health Workforce

From spring 2011 to autumn 2012, CDC held a series of conversations with stakeholders, many of whom then participated in the summit. Those stakeholders discussed the challenges facing the public health workforce more fully and offered their insights regarding what is needed to improve the situation. The stakeholders included representatives from CDC programs, HRSA, public health practice partners, public health institutes, academic associations, nonprofit organizations, and foundations. The conversations focused on the following key questions:

- How is public health changing?
- How do these changes affect the workforce?
- What is CDC’s role?

Common Themes

Three common themes emerged from these partner engagements —

- The ongoing transformation in public health or even a new public health involves
 - increasing the focus on communities while maintaining partnerships with state and local governments;
 - dealing with voluminous information from multiple sources;
 - engaging additional stakeholders;
 - navigating new territory, given the influence (short- and long-term) of health care reform;
 - developing stronger links to health care and health care delivery; and
 - strengthening monitoring, measuring, and accountability.
- The public health workforce needs to be modernized by expanding
 - training in contemporary skills (e.g., informatics and use of evolving technology), collaborative leadership, business processes, community engagement and mobilization, and marketing and communication;
 - mentorship and cross-training, which are critical because of increasing rates of job turnover and mobility;
 - population health content in health care professional curricula;
 - content about the changing health care system and the role for public health in the curricula; and
 - career pathways to attract new talent and varying skill sets.

- CDC’s role during these changing times should be to
 - act as leader and convener (not necessarily to do all of the work, but to ensure that it gets done) through partnerships and collaborations across multiple constituencies;
 - focus on more than governmental public health;
 - engage all stakeholders, including those not traditionally involved in public health, to bolster the reach and influence of our combined efforts; and
 - implement systems-based approaches (e.g., working within education or employment systems) to shift the balance to a population-based approach for workforce development.

The conversations with partners and the common themes that emerged served as the basis for the summit and shaped development of the National Public Health Workforce Strategy Roadmap.

The Roadmap

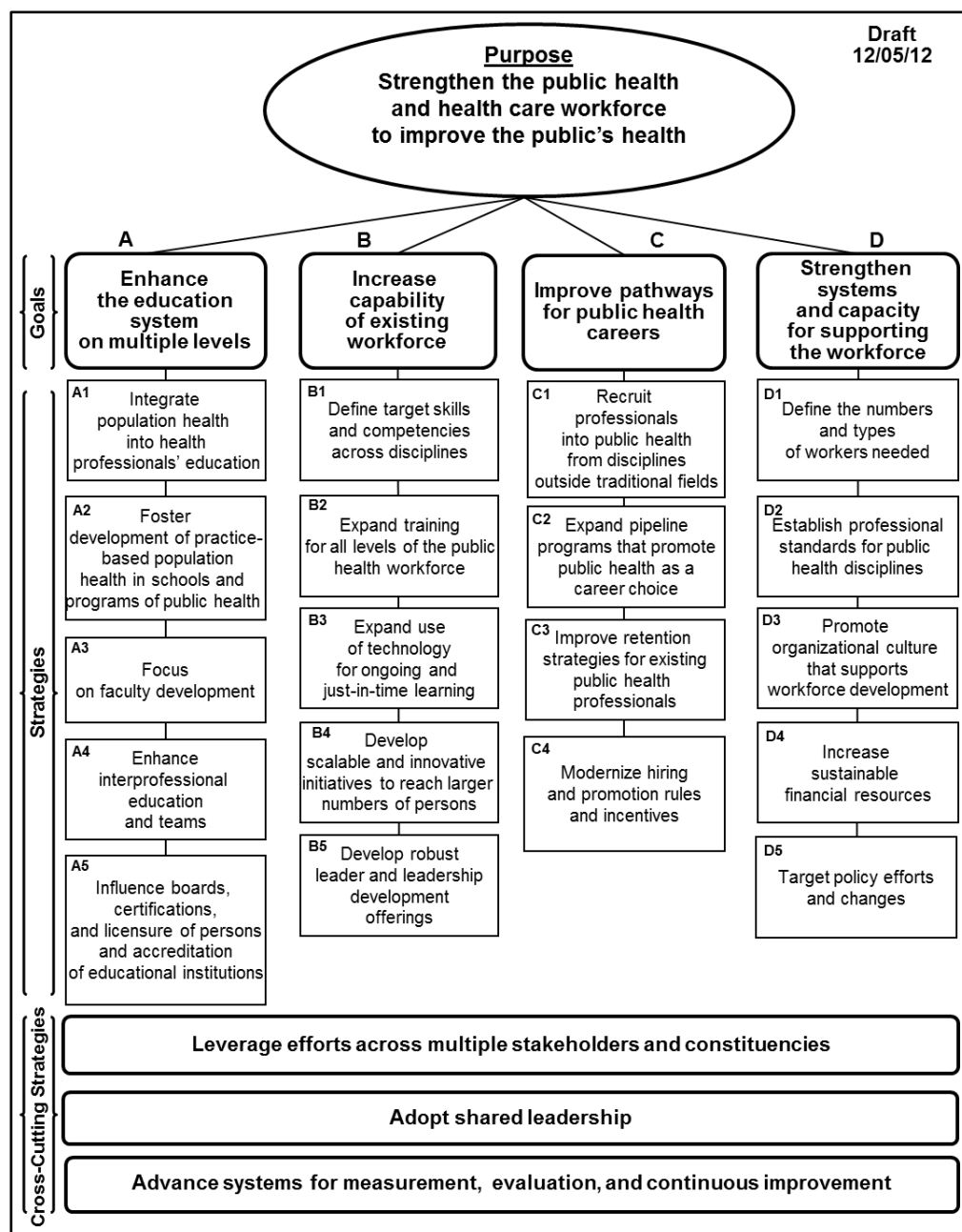
Because the workforce problems are broad and complex, requiring synergistic activities on multiple fronts, we recognized the need for a simple illustration. We developed the National Public Health Workforce Strategy Roadmap (Figure) to depict the key elements needed to strengthen the public health and health care workforce. We designed the roadmap to be expansive and inclusive and to represent the multiple constituencies that contribute directly and indirectly to the population’s health.

The journey to developing the future public health workforce begins at the top of the illustration with the oval-shaped purpose, which serves as the focus of the stakeholders’ collective efforts. Four paths are generated, supporting goals A–D, that include the supporting actions necessary and sufficient to advance the overall purpose. Three strategies cut across those paths, supporting the cumulative actions needed. This roadmap reflected our previous conversations with partners and served to focus both the summit’s presentations and the highly interactive breakout sessions. Before the summit, participants had the opportunity to provide comments about the roadmap and to rank the importance of the strategies for each goal.

Summary of the Summit

As a culmination of the series of partner meetings, we convened the summit to discuss and prioritize activities for a strategic, coordinated plan of action to establish the direction for the next 4 years. The 2-day summit encouraged interaction by including a combination of plenary and breakout sessions each day. The agenda and slide presentations are available at <http://nnphi.org/program-areas/leadership-and-workforce-development/cdc-s-public-health-workforce-development-initiative>. Additional information about CDC’s strategic workforce

Figure. The National Public Health Workforce Strategy Roadmap, 2012



activities is available at <http://www.cdc.gov/osels/sepdpo/program-booklet.pdf>. Denise Koo, MD, MPH, Director, CDC's Division of Scientific Education and Professional Development (formerly, the Scientific Education and Professional Development Program Office), opened the summit by calling attention to impending workforce problems that include an aging workforce and the associated pending retirements, diminishing numbers of workers, and gaps among skills,

capacity, and evolving practice. She acknowledged the tremendous changes in public health that affect the workforce and the need for immediate action. She then challenged the participants to take the first steps in creating a plan that engages all organizations represented, with activities specific enough to leverage different investments for impact that is greater than the individual parts.

Also in the opening session, federal partners from HRSA emphasized the importance of working together. Sarah Linde, MD, Chief Public Health Officer, underscored the importance of CDC and HRSA's collaboration and public health and health care integration. Janet Heinrich, DrPH, RN, Associate Administrator of the Bureau of Health Professions, provided a high-level description of key HRSA workforce programs.

Harvey Fineberg, MD, PhD, President of the Institute of Medicine (IOM) and David Fleming, MD, Director and Health Officer, Public Health — Seattle & King County, delivered keynote addresses. Dr. Fineberg provided an overview of IOM reports that are relevant to workforce endeavors, including the following:

- The Future of the Public's Health in the 21st Century
- Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century
- Training Physicians for Public Health Careers
- For the Public's Health: The Role of Measurement in Action and Accountability
- For the Public's Health: Revitalizing Law and Policy to Meet New Challenges
- For the Public's Health: Investing in a Healthier Future
- Primary Care and Public Health: Exploring Integration to Improve Population Health

Dr. Fineberg commented that the time has arrived to integrate the world of public health and health care, and how critical this work is to our country's future. Dr. Fleming provided a local public health perspective. He discussed how public health practice is changing and the competencies that are needed to position the public health workforce for the future. Dr. Fleming described the frontline realities of how workforce skills are mismatched with emerging challenges and reinforced that public health needs the best people now more than ever.

Panel presenters Lloyd Michener, MD, Professor and Chair, Department of Community and Family Medicine, Duke University, and Director of the Duke Center for Community Research, Louise Cohen, Vice President for Public Health Programs at Public Health Solutions, and Sonia Sarkar, Chief of Staff to the CEO of Health Leads, a national nonprofit that connects patients to basic resources needed to be healthy, all shared success stories from the field. They spoke about innovative workforce initiatives to improve the public's health and engaged in dialog with the

audience. Dr. Michener leads a medical school department that has been partnering with the local health department for decades. Ms. Cohen discussed the role of a public health institute with workforce programs, and Ms. Sarkar underscored the contribution college students can make to the health of underserved populations.

Another session highlighted health system changes, the opportunities for public health, and their effect on the workforce. Anthony Rodgers, MSc, of the national consulting firm Health Management Associates and formerly a Deputy Administrator with the Centers for Medicare & Medicaid Services (CMS), discussed changes coming from CMS as the major governmental health care payer and the rationale for those changes. Eduardo Sanchez, MD, MPH, Vice President and Chief Medical Officer for Blue Cross and Blue Shield of Texas and former Texas State Health Officer, represented the perspective of a private health insurance plan and described transformation in the health care system related to accountability and the implications for public health. Paula Staley, MPA, Acting Director, CDC’s Office of Prevention through Healthcare, concluded the session by acknowledging CDC’s concurrence regarding the need for public health to engage with the health care system. Panel presenters, Guthrie Birkhead, MD, MPH, Deputy Commissioner and Director of the Office of Public Health at the New York State Department of Health, and Kevin Barnett, DrPH, MCP, Co-Director of the California Health Workforce Alliance, ended the presentations with comments on the reality of health system changes in their locales.

During the summit, partners offered diverse perspectives regarding priorities and critical actions needed for improving the public’s health by strengthening the workforce. During the first day, summit participants rotated through brief brainstorming sessions focused on the different roadmap strategies and identified potential activities to support those strategies.

At the end of the first day, summit moderator David Altman, PhD, Executive Vice President, Research, Innovation, and Product Development at the Center for Creative Leadership, presented high-level results from the different brainstorming groups so that participants could begin to make connections across the roadmap. On the second day, the organizers designed concurrent breakout sessions around four major themes that aligned with the roadmap —

- integrating population health into health professionals’ education;
- fostering the application of practice-based population health in schools and programs of public health;
- increasing capability of the existing workforce; and
- establishing public health career pathways and systems capacity.

Participants brainstormed their priorities and action items applicable to each specific theme. During the breakout sessions, participants identified priorities for supporting that theme (short- or long-term); specific action items for accomplishing each priority; partners involved in activities that support that priority; and potential partners who might be involved in activities supporting that priority.

About the Summit Summary Report and Key Priorities

This summary report presents key priorities and action items identified during participant discussions at the summit; those priorities and action items are described collectively according to the four major themes described in the previous section. Appendix A includes the specific priorities, action items, partners, potential partners, and certain existing models that were identified under each of these themes by summit participants or in their subsequent review of drafts of this summary report. Appendix B is a list of those partners, with links to each one’s Internet site, and other abbreviations and acronyms used in this report. Summit participants and other interested persons had the opportunity to review this material to ensure that it accurately reports the groups’ discussions and to offer comments on additional priorities that might have been missed.

Participants noted the importance of defining and being clear about the meaning of the term *population health*, which is defined as the health outcomes of a group of persons, including the distribution of such outcomes within the group. These groups are often geographic populations (e.g., nations or communities), but can also be other groups (e.g., employees, ethnic groups, disabled persons, prisoners, or any other defined group). Health care providers also often use the term *population health* to mean the patients served by their practice, but that is not the meaning used for this effort or in this report. For our purposes, we use the term *population health* to refer to geographic or jurisdictionally bound populations (e.g., an entire county, state, or country).

Caveats

- Certain overlap occurred among the identified priorities because discussion groups worked separately.
- The roadmap used at the summit and in the figure in this report has been revised on the basis of input provided by partners, and the updated version is available at <http://www.cdc.gov/osels/sepdpo/strategic-workforce-activities.html>.
- Summit participants and other reviewers of this report identified their own organizations as partners or potential partners; they also indicated other groups that might be engaged; however, these potential partners have not been contacted yet to confirm their interest.

- Participants mentioned philanthropic organizations as potential partners and funders for different activities. In the appendix, *philanthropic organizations* is stated in general terms rather than specifically naming foundations, except when one already is a partner for an existing activity.
- Participants discussed federal agencies as partners throughout the summit. Because federal agencies and their roles are broad and because agencies, or components of agencies, were not fully represented, they are not named specifically in this report, except for certain partners of existing activities. We encourage readers to think broadly about the roles of federal agencies and consider not only the traditional public health agencies but also less traditional ones that were mentioned during the summit (e.g., CMS, the U.S. Department of Education, the U.S. Department of Labor, U.S. Department of Transportation, the National Prevention Council, and the Office of Disease Prevention and Health Promotion).
- For certain priorities, participants noted examples of existing models or resources that might be useful. We will likely identify other existing models that were not described during the summit or mentioned in this report.
- The need for sustainable financial resources for workforce development was expressed clearly multiple times during discussions and among the priorities. Because this is an overarching need, we refrain from mentioning it repeatedly. Leveraging our collaborative efforts and capitalizing on synergies will enhance the impact of future efforts.

Future Directions

CDC will incorporate summit priorities and action items contained in this report, the roadmap, and ongoing discussions with partners into a National Public Health Workforce Strategic Framework. This framework will allow partners to identify how their individual efforts contribute to the advancement of the workforce, as well as how collective efforts can address the priorities and action items identified at the summit. We anticipate that the strategic framework and its associated Internet site will serve as a dynamic tool for partnership, prioritization, gap assessment, and commitment to the highest priorities for strengthening the workforce to improve the public’s health.

Ultimately, this framework will support

- shifting the balance of workforce development from a focus primarily on individual workers to one that also targets systems-based approaches affecting education and employment systems;
- integrating the public health and health care systems; and
- identifying how CDC and partners collectively and individually are strengthening the workforce needed to improve the public’s health.

Shifting the balance to modernize the workforce will indeed require a focused and strategic targeting of efforts over time by the multiple stakeholders. CDC and the partners have voiced a collective commitment to moving forward with the priorities and action items that are needed for a sustainable, skilled, and integrated public health and health care workforce.

APPENDIX A

Themes, Priorities, and Action Items

Theme 1. Integrating Population Health Into Health Professional Education

The priority activities proposed under this topic most closely align with Roadmap Goal A: *Enhance the education system on multiple levels*, with a focus on the strategy to *Integrate population health into health professional education*.

Theme 1, Priority 1	
Create a common set of population health core competencies for all health professionals who are or will be performing clinical practice other than working in public health	
Action Items	Current Partners
<ul style="list-style-type: none"> a. Identify public health outcomes that will influence competencies, possibly working with the Interprofessional Education Consortium (IPEC) b. Create an inventory of competencies across different health professions (nursing, pharmacy, dentistry, medicine, and others) to increase understanding of what the different professions bring to the public health system and how they complement one another in working together c. Cross-walk the existing discipline-specific competencies for different health professions; align and link to <i>Healthy People 2020</i> d. Create an ongoing clearinghouse for sharing competencies, similar to the Council on Linkages for Public Health Competencies e. To better integrate competencies into practice, develop an increased number of interprofessional experiences in public health, including interprofessional postgraduate population health residency programs for all professions 	<p>American Association of Colleges of Nursing (AACN), Association of American Medical Colleges (AAMC), and the Association for Prevention Teaching and Research (APTR)</p> <p>Healthy People Curriculum Task Force</p>
	Potential Partners
	<p>American Association of Community Colleges (AACC), American Board of Preventive Medicine (ABPM), Association of Community Health Nursing Educators (ACHNE), American College of Preventive Medicine (ACPM), ACPM’s Council of Residency Program Directors, Council on Linkages Between Academia and Public Health Practice (COL), federal agencies, internship and residency directors (e.g., pharmacy, dental), Interprofessional Education Collaborative (IPEC), National Commission for the Credentialing of Health Educators, Inc. (NCHEC), and Public Health Foundation (PHF)</p>

Theme 1, Priority 2

Expand available resources to integrate population health in professional education

Action Items	Current Partners
<ul style="list-style-type: none"> a. Design online courses to meet competencies b. Aggregate curricular or best-practice examples of successful approaches for didactic and clinical education c. Develop new or strengthen existing academic-practice partnerships for education of health professionals, including identifying preceptors, clinical faculty, and clinical opportunities d. Engage in dialog and joint activities concerning cooperative agreements of federal agencies e. Identify effective practices across all professions f. Use the media to publicize efforts g. Use social networking to support sharing of interprofessional experiences 	<p>AACN, AAMC, APTR, Association of Schools and Programs of Public Health (ASPPH), and CDC</p>
	Potential Partners
	<p>AACC, Association of State and Territorial Health Officials (ASTHO), ASTHO affiliates, COL, federal agencies, Federation of Associations of Schools of the Health Professions (FASHP), IPEC, National Association of County and City Health Officials (NACCHO), philanthropic organizations, professional associations, PHF</p>
	Existing Models or Resources
	<p>AACN’s online Public Health Nursing Education Community and curriculum innovations; AAMC’s online community of practice for public health in medical education and the MedEdPORTAL’s Public Health Collection; APTR’s population health modules; ASPPH’s <i>Milestones in Public Health Curriculum</i> (introductory public health course developed in partnership with the George Washington University School of Public Health); PHF’s TRAIN; PHN Ready from University of Albany (provides free continuing education credit for public health nurses and others)</p>

Theme 1, Priority 3

Improve faculty development to include a focus on population health

Action Items	Current Partners
<ul style="list-style-type: none"> a. Create opportunities for faculty to work in public health (e.g., sabbaticals or faculty practice opportunities) b. Identify and embed practice-based faculty from the community, including those who might not possess graduate or terminal degrees, in academic settings c. Develop or expand institutes for in-service professional trainings d. Provide leadership programs, potentially building on existing models 	AACN, AAMC, APTR, ASPPH
	Potential Partners
	ACHNE, American Public Health Association (APHA), ASTHO, ASTHO affiliates, COL, federal agencies, IPEC, National Public Health Leadership Institutes (PHLI), public health training centers (PHTCs)
	Existing Models or Resources
	IPEC sponsors a series of 3-day institutes for interprofessional faculty teams (might focus on public health as a topic)

Theme 1, Priority 4

Increase the diversity and inclusion of public health learners and faculty

Action Items	Current Partners
a. Link to existing groups that are working to increase diversity	AACN, AAMC, APTR, ASPPH, and CDC
	Potential Partners
	AACC, ASTHO, ASTHO affiliates, Association of Land Grant Universities, FASHP, philanthropic organizations with interest in this area, PHTCs that have been active in diversity pipeline efforts, professional societies that represent minorities (e.g., the National Medical Association and American Medical Student Association), the Sullivan Alliance

Theme 1, Priority 5	
Modify approaches to learning and emphasize adult learning principles	
Action Items	Current Partners
<p>a. Enhance partnerships of health professional schools or programs and public health agencies to provide increased opportunities to learn through real-world practice</p> <p>b. Enhance interprofessional education in improving health</p>	AACN, AAMC, APTR, and ASPPH
	Potential Partners
	ACHNE, ASTHO, ASTHO affiliates, COL, IPEC, NACCHO, and National Network of Public Health Institutes (NNPHI)
	Existing Models or Resources
	AACN has several toolkits that could serve as models, academic health departments (AHDs), Linking Education and Practice for Excellence in Public Health Nursing (LEAP), a statewide academic and practice collaboration in Wisconsin

Theme 1, Priority 6

Improve applied experiences in public health

Action Items	Current Partners
<ul style="list-style-type: none"> a. Experiences for faculty (e.g., sabbaticals, AHDs) b. Experiences for students (e.g., fellowships, internships, practicums) c. Social networking (media) to share examples and increase awareness of new approaches 	AACN, AAMC, APTR, and ASPPH
	Potential Partners AACC, ACHNE, AHDs, APHA, ASTHO, ASTHO affiliates, COL, Directors of Health Promotion and Education (DHPE), FASHP, NACCHO, philanthropic organizations with interest in this area, and the Sullivan Alliance

Theme 1, Priority 7

Identify ways to influence accreditation, certification, or licensure standards for different health professions

Action Items	Current Partners
<ul style="list-style-type: none"> a. Cross-walk the expected outcomes for different health professions related to public health practice to illustrate potential synergies b. Strengthen public health educational content or practical experiences, as appropriate for each profession c. Establish expected population health outcomes for graduates at different levels (e.g., associate, baccalaureate, master’s, doctoral), as appropriate to the respective professions, so that the accrediting bodies then review programs on the basis of these expected outcomes 	AACN, AAMC, APTR, and ASPPH
	Potential Partners Council on Education for Public Health (CEPH), NCHEC, Public Health Accreditation Board (PHAB) as a think-tank forum to include accreditation efforts of other health professions

Theme 2. Fostering the Application of Practice-Based Population Health in Schools and Programs of Public Health

The activities proposed under this topic most closely align with Roadmap Goal A — *Enhance the education system at multiple levels*, with a focus on the strategy to *Foster the development of practice-based population health in schools and programs of public health*.

Theme 2, Priority 1	
Continue the discussion to collaboratively reframe the skills and knowledge needed by the future public health workforce	
Action Items	Current Partners
<ul style="list-style-type: none"> a. Leverage existing resource, ASPPH’s Framing the Future Task Force, as a mechanism to convene and discuss b. Focus discussions around educational requirements to address the integration of the public health and health care delivery system 	APTR, Association of American Colleges and Universities (AAC&U), ASPPH, ASTHO, ASTHO affiliates, CDC, and NACCHO
	Potential Partners
	Accountable care organizations (ACOs), COL, Council of State and Territorial Epidemiologists (CSTE), customers, federal agencies, payers, PHF, providers, representatives from health professions schools and schools for nonhealth-related professions (e.g., planning, architecture, transportation)
	Existing Models or Resources
	Public Health Practice-Based Research Network (PBRN)

Theme 2, Priority 2

Define and develop institutionalized collaborative models of teaching and practice

Action Items	Current Partners
<ul style="list-style-type: none"> a. Convene a group to identify existing exemplar practices for educating public health students through practical experiences b. Leverage CDC’s cooperative agreements with academic partners to include training and collaborative work on evaluation with health departments and public health institutions as part of the program requirements c. Leverage CDC’s cooperative agreements with nonprofit organizations to include collaborative work (e.g., Community Health Assessments [for health departments] and Community Health Needs Assessments [for nonprofit hospitals]) d. Evaluate outcomes to verify effectiveness of collaboration 	AACN, AAMC, APTR, ASPPH, and CDC
	Potential Partners Area Health Education Centers (AHECs) Program, ASTHO, ASTHO affiliates, CSTE, NACCHO, National Association of Community Health Centers (NACHC), payers, PHAB, and providers

Theme 2, Priority 3

Promote and develop academic health departments and educational units within health departments

Action Items	Current Partners
<ul style="list-style-type: none"> a. Leverage resources through COL and CEPH-accredited schools and programs of public health b. Train preceptors and mentors 	AHD Learning Community, APTR, ASPPH, COL
	Potential Partners
	AACN, AAMC ASTHO, ASTHO affiliates, NACCHO, and PHTCs
	Existing Models or Resources
	AACN Academic-Practice partnership toolkit; training modules developed by schools of public health with academic health departments; and training sites in nursing known as dedicated education units (DEUs) with established staff mentors and preceptors

Theme 2, Priority 4

Ensure that federal public health research and training centers are positioned effectively to address the needs of the public health workforce and faculty of the future

Action Items	Current Partners
<ul style="list-style-type: none"> a. Create advisory groups, as necessary, that include persons who can address the integration skills that are needed b. Ensure that research and training products are strategic and relevant to health departments 	ASPPH, federal agencies
	Potential Partners
	APHA, ASTHO, ASTHO affiliates, CDC, community health centers (CHCs), COL, federally qualified health centers (FQHCs), and NACCHO
	Existing Models or Resources
	<i>The Core Competencies for Public Health Professionals</i>

Theme 2, Priority 5

Develop fellowship or residency opportunities for public health students and graduates of CEPH-accredited schools and programs of public health to be placed within the new health system

Action Items	Current Partners
<ul style="list-style-type: none"> a. Promote continuing education for public health b. Model the continuing education program after the nursing education model 	CDC and other federal agencies
	Potential Partners
	ACOs, APHA, ASPPH, CSTE, DHPE, payers, placement sites
	Existing Models or Resources
	ACOs, CDC fellowship programs, nursing postbaccalaureate residency programs accredited by the Commission on Collegiate Nursing Education (CCNE)

Theme 2, Priority 6

Develop faculty experience and expertise for new practice and educational models

Action Items	Current Partners
<ul style="list-style-type: none"> a. Develop adjunct faculty from the public health practice community b. Use other types of faculty (e.g., nursing) in CEPH-accredited schools and programs of public health and vice versa or co-teach c. Develop reward systems for real-world experience 	AACN, AAMC, APTR, and ASPPH
	Potential Partners
	COL and NNPHI

Theme 3. Increase Capability of Existing Workforce

The activities proposed under this topic most closely align with Roadmap Goal B: *Increase capability of existing workforce.*

Theme 3, Priority 1	
Enhance personnel policies to support workforce development	
Action Items	Current Partners
a. Engage national organizations and state personnel directors to improve support for personnel and workforce policies	ASTHO and NACCHO
	Potential Partners
	Federal agencies, National Accreditation Commission (NAC), National Governors Association (NGA), PHAB (accreditation could provide a needed benchmark or incentive), states, state human resources directors, unions

Theme 3, Priority 2

Leverage and strengthen the national system of public health leadership around workforce enhancement and training; mobilize existing leaders

Action Items	Current Partners
<ul style="list-style-type: none"> a. Create mentoring or coaching programs in all public health organizations b. Create residency and fellowship programs for new public health workers c. Evaluate the impact of workforce development; establish metrics 	ASTHO, ASTHO affiliates, CDC, and NACCHO
	Potential Partners
	AACN, AAMC, APHA, ASPPH leadership institutes, NNPHI, National Public Health Leadership Development Network (NPHLD), Public Health Leadership Society (PHLS), public health organizations’ leadership
	Existing Models or Resources
	COL report, <i>Improving and Measuring the Impact of Training: Strategies and Methods</i> (draft available on request from PHF)

Theme 3, Priority 3

Create or assemble a universal public health toolkit of workforce development resources for the life cycle of public health worker

Action Items	Current Partners
<ul style="list-style-type: none"> a. Build upon existing trainings in the entire TRAIN system and upon those from other organizations b. Identify gaps c. Develop training or course offerings by track (e.g., public health, environmental health, informatics) that are more in-depth than a 101-level training 	<p>CDC, COL, federal agencies, and PHF</p>
	<p>Potential Partners</p> <p>Association of Public Health Laboratories (APHL), ASPPH, ASTHO, ASTHO affiliates, and NACCHO</p>
	<p>Existing Models or Resources</p> <p>CDC Learning Connection and CDC TRAIN provide training resources; PHF’s TRAIN offers training plans that can be tailored for specific disciplines or specific work settings; Public Health Nurse Ready from the University of Albany provides free continuing education credit for public health nurses and others</p>

Theme 3, Priority 4

Leverage electronic health records (EHRs) for training and surveillance needs; provide training in informatics

Action Items	Current Partners
<ul style="list-style-type: none"> a. Train the public health workforce in the use and potential of EHRs b. Train health care professionals to work with public health and to use public health data 	<p>ASTHO, ASTHO affiliates, CDC, CSTE, NACCHO, Office of the National Coordinator for Health Information Technology (ONC), Public Health Informatics Institute (PHII)</p>
	Potential Partners
	<p>Academia, American Medical Informatics Association (AMIA), ASPPH, Joint Public Health Informatics Taskforce (JPHIT), NACCHO, provider organizations, vendors</p>
	Existing Models or Resources
	<p>Training modules and summer institutes focusing on public health informatics available from CEPH-accredited schools and programs of public health</p>

Theme 3, Priority 5

Provide continuing education and on-the-job training within and across public health, health care, and nonhealth sectors

Action Items	Current Partners
<ul style="list-style-type: none"> a. Explore demand for training of public health workforce (e.g., needs assessments) b. Establish professional staff exchange programs for cross-training (i.e., governmental public health workers spend time with health plans and ACOs, and health care professionals spend time in public health organizations) c. Offer incentives for public health competence and training (e.g. continuing education credit) 	<p>ASTHO, ASTHO affiliates, CDC, NACCHO, National Environmental Health Association (NEHA), NNPHI, PHF</p>
	<th data-bbox="906 625 1421 688">Potential Partners</th> <p data-bbox="912 709 1414 877">Academia, APHA, ASPPH, community development organizations, credentialing organizations, federal agencies’ human resources departments, federal agencies</p>

Theme 3, Priority 6

Ensure that the revision of the *Core Competencies for Public Health Professionals* reflects emerging trends and aligns with public health practice needs

Action Items	Current Partners
a. Encourage broad input during the review process for the <i>Core Competencies</i> to include academic institutions, federal government, state and local health departments, and other public health practice settings	COL and PHF
	Potential Partners
	AACC, AACN, AAMC, American Nurses Credentialing Center (ANCC), ASPPH, ASTHO, ASTHO affiliates, APHA, CDC, CSTE, federal agencies, NACCHO
	Existing Models or Resources
	<i>Core Competencies for Public Health Professionals</i> (under revision), ASTHO — de Beaumont Foundation project and national survey on public health worker of the future

Theme 4. Public Health Career Pathways and Systems Capacity

The activities proposed under this topic most closely align with Roadmap Goal C: *Improve pathways for public health careers* and Goal D: *Strengthen systems and capacity to support the workforce*.

This group developed their own overarching goal, *Refine a career and education lattice that offers continuous progression for careers informed by public health knowledge (cradle to career)*. They suggested rewording this topic to “career lattice” instead of “career pathway” to indicate that careers can move side to side as well as up or down and to reflect the interconnectedness of career opportunities in multiple sectors.

Theme 4, Priority 1	
Build on the expansion of existing successful programmatic efforts to support diversity, recruitment, retention, and succession planning efforts	
Action Items	Current Partners
<ul style="list-style-type: none"> a. Expand summer student programs for future health professionals (e.g., medical, dental, nursing) to focus on exposing them to public health b. Increase interagency collaboration of federal agencies on pipeline programs from middle school to professional school c. Integrate public health content and mentoring for students in grades K–16 d. Expand AAC&U’s Educated Citizen and Public Health Initiative, a campaign to build awareness and promote public health programs e. Expand efforts to increase the proportion of 2-year colleges that offer public health or related associate degrees or certificate programs 	<p>AAMC, APTR, ASPPH, ASTHO, ASTHO affiliates, AAC&U, CDC, DHPE, federal agencies, Healthy People Curriculum Task Force, NACCHO, and the Robert Wood Johnson Foundation (RWJF)</p>
	Potential Partners
	<p>AACN, accrediting bodies, ACHNE, APHA, ASTHO, ASTHO affiliates, community health workers (CHWs), federal agencies, Health Occupations Students of America (HOSA), NAACHO, and PHF</p>
	Existing Models or Resources
	<p>AACC, AAMC’s Summer Medical and Dental Education Program (SMDEP); ASPPH’s Framing the Future and “I Am Public Health” web application; National Health Service Corps; and Science Olympiad Disease Detectives event</p>

Theme 4, Priority 2

Increase interprofessional and cross-sector engagement (e.g., economists, architects) to leverage resources and infuse public health across many professions, and to prepare for the future workforce needs

Action Items	Current Partners
<ul style="list-style-type: none"> a. Use novel technology (e.g., online training including massive open online courses — MOOCs) for course exchange with other disciplines b. Co-present (public health and other disciplines) at professional meetings for different sectors c. Connect deans of CEPH-accredited schools of public health and representatives of programs of public health to other disciplines within and outside their own institutions d. Offer certification in public health for other disciplines, (e.g., through rotations, summer institutes, or internships) to recognize specific training and expertise 	Potential Partners
	<p>ASPPH and CDC</p> <p>AACC, AAC&U, APTR, community colleges, federal agencies, PHF (by expanding TRAIN to nonhealth disciplines), and schools and professions from other fields (e.g., economists, architecture, engineering, industrial hygienists, safety specialists, journalism, communications, and law)</p>

Theme 4, Priority 3

Focus on a continuum of learning and educational progression

Action Items	Current Partners
<ul style="list-style-type: none"> a. Emphasize support of institutions that serve communities b. Develop core curriculum for associate and baccalaureate public health degrees c. Assess and evaluate existing and proposed pipeline programs to identify and track those with public health undergraduate degrees to their next career step d. Create linkages between community health workers and community programs (for credit in educational programs) e. Develop interprofessional, team-based learning and practices 	AAC&U, ASPPH, CHWs, and community colleges
	Potential Partners
	AACC, AACN, AAMC, AHECs Program, allied health professions, American Association of Colleges of Osteopathic Medicine (AACOM), APTR, California Health Workforce Alliance, colleges of pharmacy, American Dental Education Association (ADEA), federal agencies, IPEC, PHTCs
	Existing Models or Resources
	Undergraduate Learning Outcomes Model developed by ASPPH in collaboration with AAC&U, APTR, and CDC

APPENDIX B
Current and Potential Partners and Other Abbreviations
and Acronyms Included in This Report

AACC	American Association of Community Colleges http://www.aacc.nche.edu/Pages/default.aspx
AACN	American Association of Colleges of Nursing, http://www.aacn.nche.edu/
AACOM	American Association of Colleges of Osteopathic Medicine http://www.aacom.org/Pages/default.aspx
AAC&U	Association of American Colleges and Universities http://www.aacu.org/
AAMC	Association of American Medical Colleges https://www.aamc.org/
ABPM	American Board of Preventive Medicine http://www.theabpm.org/
ACHNE	Association of Community Health Nursing Educators http://www.achne.org/i4a/pages/index.cfm?pageid=1
ACOs	accountable care organizations
ACPM	American College of Preventive Medicine http://www.acpm.org/ and the ACPM Council of Residency Program Directors, http://www.acpm.org/?Residency_Prog_Dir
ADEA	American Dental Education Association http://www.adea.org/
AHDs	academic health departments
AHECs	Area Health Education Centers Program http://bhpr.hrsa.gov/grants/areahealtheducationcenters/
AMIA	American Medical Informatics Association http://www.amia.org/
ANCC	American Nurses Credentialing Center http://www.nursecredentialing.org/
APHA	American Public Health Association http://www.apha.org/
APHL	Association of Public Health Laboratories http://www.aphl.org/Pages/default.aspx
APTR	Association for Prevention Teaching and Research http://www.aptrweb.org/
ASPPH	Association of Schools and Programs of Public Health http://www.aspph.org/

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ASTHO	Association of State and Territorial Health Officials http://www.astho.org/
CCNE	Commission on Collegiate Nursing Education http://www.aacn.nche.edu/ccne-accreditation
CDC	Centers for Disease Control and Prevention http://www.cdc.gov
CEPH	Council on Education for Public Health http://ceph.org/
CHCs	community health centers
CHWs	community health workers
COL	Council on Linkages Between Academia and Public Health Practice http://www.phf.org/programs/council/Pages/default.aspx
CSTE	Council of State and Territorial Epidemiologists http://www.cste.org/
DEUs	dedicated education units
DHPE	Directors of Health Promotion and Education https://dhpe.site-ym.com/
EHRs	electronic health records
FASHP	Federation of Associations of Schools of the Health Professions
FQHCs	federally qualified health centers
HOSA	Health Occupations Students of America http://www.hosa.org/
IOM	Institute of Medicine http://www.iom.edu/
IPEC	Interprofessional Education Collaborative https://ipecollaborative.org/
JPHIT	Joint Public Health Informatics Taskforce http://jphit.org/
LEAP	Linking Education and Practice for Excellence in Public Health Nursing
MOOCs	massive open online courses
NAC	National Accreditation Commission http://www.naccp.org/displaycommon.cfm?an=10
NACCHO	National Association of County and City Health Officials http://www.naccho.org/
NACHC	National Association of Community Health Centers http://www.nachc.org/
NCHEC	National Commission for the Credentialing of Health Educators, Inc. http://www.nchec.org/

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NEHA	National Environmental Health Association http://www.neha.org/index.shtml
NGA	National Governors Association http://www.nga.org/cms/home.html
NNPHI	National Network of Public Health Institutes http://www.nnphi.org/
NPHLD	National Public Health Leadership Development Network http://www.heartlandcenters.slu.edu/nln/
ONC	Office of the National Coordinator for Health Information Technology http://www.healthit.gov/newsroom/about-onc
PBRN	Public Health Practice-Based Research Network http://www.publichealthsystems.org/
PHAB	Public Health Accreditation Board http://www.phaboard.org/
PHF	Public Health Foundation http://www.phf.org/Pages/default.aspx
PHII	Public Health Informatics Institute http://www.phii.org/
PHLI	National Public Health Leadership Institute http://www.phli.org/
PHLS	Public Health Leadership Society http://www.phls.org/home/
PHTCs	public health training centers
PHWDI	Public Health Workforce Development Initiative http://www.cdc.gov/osels/sepdpo/strategic-workforce-activities.html#development-initiative
RJWF	Robert Wood Johnson Foundation http://www.rwjf.org/
SMDEP	Summer Medical and Dental Education Program, a national program funded by RJWF with direction provided by AAMC and ADEA http://www.smdep.org/
The Sullivan Alliance	The Sullivan Alliance to Transform the Health Professions, organized to act on the reports and recommendations of the Sullivan Commission (Missing Persons: Minorities in the Health Professions), and the Institute of Medicine Committee on Institutional and Policy-Level Strategies for Increasing the Diversity of the U.S. Healthcare Workforce http://www.thesullivanalliance.org/